

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Westfield  
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Westfield, MA 01085  
Tel: (413)572-4000

CHECKED FOR COMPLETENESS  
OF PARAMETERS ORDERED BY:

*[Signature]*  
9/21/11

TestAmerica Job ID: 360-35962-1  
Client Project/Site: Olin Chemical Quarterly Groundwater

For:  
Olin Corporation  
PO BOX 248  
Charleston, Tennessee 37310-0248

Attn: Mr. James Cashwell

*[Signature]*

Authorized for release by:

09/09/2011 02:00:24 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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# Case Narrative

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

**Job ID: 360-35962-1**

**Laboratory: TestAmerica Westfield**

## Narrative

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The samples were received on 08/25/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.1 C.

### DISSOLVED METALS

Samples OC-GW-202S (360-35962-1), OC-GW-202D (360-35962-2), OC-GW-25 (360-35962-3), OC-GW-78S (360-35962-4), OC-GW-79S (360-35962-5), OC-PZ-16RR (360-35962-6), OC-PZ-17RR (360-35962-7), OC-PZ-18R (360-35962-8), OC-PZ-24 (360-35962-9) and OC-PZ-25 (360-35962-10) were analyzed for dissolved metals in accordance with EPA SW-846 Method 6010B. The samples were analyzed on 09/01/2011.

Sample OC-GW-202D (360-35962-2)[2X] required dilution prior to analysis due to high non-target concentration. The reporting limits have been adjusted accordingly.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No difficulties were encountered during the dissolved metals analyses.

All quality control parameters were within the acceptance limits.

### ANIONS (28 DAY HOLD TIME)

Samples OC-GW-202S (360-35962-1), OC-GW-202D (360-35962-2), OC-GW-25 (360-35962-3), OC-GW-78S (360-35962-4), OC-GW-79S (360-35962-5), OC-PZ-16RR (360-35962-6), OC-PZ-17RR (360-35962-7), OC-PZ-18R (360-35962-8), OC-PZ-24 (360-35962-9) and OC-PZ-25 (360-35962-10) were analyzed for anions (28 day hold time) in accordance with EPA Method 300.0. The samples were analyzed on 08/27/2011 and 08/31/2011.

Samples OC-GW-202S (360-35962-1)[10X], OC-GW-202D (360-35962-2)[10X], OC-GW-202D (360-35962-2)[50X], OC-GW-25 (360-35962-3)[10X], OC-GW-78S (360-35962-4)[10X], OC-GW-79S (360-35962-5)[10X], OC-GW-79S (360-35962-5)[20X], OC-PZ-16RR (360-35962-6)[10X], OC-PZ-17RR (360-35962-7)[10X], OC-PZ-18R (360-35962-8)[10X], OC-PZ-24 (360-35962-9)[10X] and OC-PZ-25 (360-35962-10)[10X] required dilution prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

### AMMONIA

Samples OC-GW-202S (360-35962-1), OC-GW-202D (360-35962-2), OC-GW-25 (360-35962-3), OC-GW-78S (360-35962-4), OC-GW-79S (360-35962-5), OC-PZ-16RR (360-35962-6), OC-PZ-17RR (360-35962-7), OC-PZ-18R (360-35962-8), OC-PZ-24 (360-35962-9) and OC-PZ-25 (360-35962-10) were analyzed for ammonia in accordance with Lachat 107-06-1B. The samples were prepared on 09/02/2011 and analyzed on 09/06/2011.

Samples OC-GW-202S (360-35962-1)[10X], OC-GW-202D (360-35962-2)[10X], OC-GW-25 (360-35962-3)[5X], OC-GW-78S (360-35962-4)[5X], OC-GW-79S (360-35962-5)[10X], OC-PZ-16RR (360-35962-6)[10X], OC-PZ-17RR (360-35962-7)[5X], OC-PZ-18R (360-35962-8)[5X],

## Case Narrative

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

### Job ID: 360-35962-1 (Continued)

#### Laboratory: TestAmerica Westfield (Continued)

OC-PZ-24 (360-35962-9)[10X] and OC-PZ-25 (360-35962-10)[10X] required dilution prior to analysis due to high concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

#### SPECIFIC CONDUCTIVITY

Samples OC-GW-202S (360-35962-1), OC-GW-202D (360-35962-2), OC-GW-25 (360-35962-3), OC-GW-78S (360-35962-4), OC-GW-79S (360-35962-5), OC-PZ-16RR (360-35962-6), OC-PZ-17RR (360-35962-7), OC-PZ-18R (360-35962-8), OC-PZ-24 (360-35962-9) and OC-PZ-25 (360-35962-10) were analyzed for specific conductivity in accordance with SM20 2510B. The samples were analyzed on 09/01/2011.

Samples OC-GW-202D (360-35962-2)[5X], OC-GW-79S (360-35962-5)[2X] and OC-PZ-16RR (360-35962-6)[2X] required dilution prior to analysis due to high conductance. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the conductivity analyses.

All quality control parameters were within the acceptance limits.

# MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Westfield** Project #: **360-35962-1**

Project Location: RTN:

This form provides certifications for the following data set: list Laboratory Sample ID Number(s):

**360-35962-(1-10)**

Matrices: ☒ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

## CAM Protocols (check all that apply below):

|  |  |   |  |  |   |
|--|--|---|--|--|---|
| 8260 VOC<br>CAM II A <input type="checkbox"/>                | 7470/7471 Hg<br>CAM III B <input type="checkbox"/> | Mass DEP VPH<br>CAM IV A <input type="checkbox"/> | 8081 Pesticides<br>CAM V B <input type="checkbox"/>            | 7196 Hex Cr<br>CAM VI B <input type="checkbox"/>         | Mass DEP APH<br>CAM IX A <input type="checkbox"/> |
| 8270 SVOC<br>CAM II B <input type="checkbox"/>               | 7010 Metals<br>CAM III C <input type="checkbox"/>  | Mass DEP EPH<br>CAM IV B <input type="checkbox"/> | 8151 Herbicides<br>CAM V C <input type="checkbox"/>            | 8330 Explosives<br>CAM VIII A <input type="checkbox"/>   | TO-15 VOC<br>CAM IX B <input type="checkbox"/>    |
| 6010 Metals<br>CAM III A <input checked="" type="checkbox"/> | 6020 Metals<br>CAM III D <input type="checkbox"/>  | 8082 PCB<br>CAM V A <input type="checkbox"/>      | 9014 Total<br>Cyanide/PAC<br>CAM VI A <input type="checkbox"/> | 332.0 Perchlorate<br>CAM VIII B <input type="checkbox"/> |   |

## Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

|          |   |  |
|----------|---|--|
| <b>A</b> | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |
| <b>B</b> | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |
| <b>C</b> | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |
| <b>D</b> | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |
| <b>E</b> | a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).<br>b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Yes <input type="checkbox"/> No |
| <b>F</b> | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |

## Responses to Questions G, H and I below are required for "Presumptive Certainty" status

|          |   |  |
|----------|---|--|
| <b>G</b> | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup> |
|----------|---|--|

**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350

|          |   |   |
|----------|---|---|
| <b>H</b> | Were all QC performance standards specified in the CAM protocol(s) achieved?                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <b>I</b> | Were results reported for the complete analyte list specified in the selected CAM protocol(s) ? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.*

Signature: 

Position: Quality Assurance Manager

Printed Name: Christine Reynolds

Date: 9/9/11 13:55

This form has been electronically signed and approved

## Detection Summary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

### Client Sample ID: OC-GW-202S

### Lab Sample ID: 360-35962-1

| Analyte              | Result | Qualifier | RL  | MDL  | Unit     | Dil | Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|-----|------|----------|-----|-----|---|------------|-----------|
| Chromium             | 4.4    | J         | 5.0 | 0.65 | ug/L     | 1   |     |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL  | RL   | Unit     | Dil | Fac | D | Method     | Prep Type |
| Sulfate              | 380    |           | 20  | 20   | mg/L     | 10  |     |   | 300.0      | Total/NA  |
| Chloride             | 60     |           | 10  | 10   | mg/L     | 10  |     |   | 300.0      | Total/NA  |
| Ammonia              | 62     |           | 1.0 | 1.0  | mg/L     | 10  |     |   | L107-06-1B | Total/NA  |
| Specific Conductance | 1300   |           | 1.0 | 1.0  | umhos/cm | 1   |     |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-GW-202D

### Lab Sample ID: 360-35962-2

| Analyte              | Result | Qualifier | RL  | MDL | Unit     | Dil | Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|-----|-----|----------|-----|-----|---|------------|-----------|
| Aluminum             | 12000  |           | 200 | 25  | ug/L     | 2   |     |   | 6010B      | Dissolved |
| Chromium             | 930    |           | 10  | 1.3 | ug/L     | 2   |     |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL  | RL  | Unit     | Dil | Fac | D | Method     | Prep Type |
| Sulfate              | 1900   |           | 100 | 100 | mg/L     | 50  |     |   | 300.0      | Total/NA  |
| Chloride             | 310    |           | 10  | 10  | mg/L     | 10  |     |   | 300.0      | Total/NA  |
| Ammonia              | 190    |           | 1.0 | 1.0 | mg/L     | 10  |     |   | L107-06-1B | Total/NA  |
| Specific Conductance | 4800   |           | 5.0 | 5.0 | umhos/cm | 5   |     |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-GW-25

### Lab Sample ID: 360-35962-3

| Analyte              | Result | Qualifier | RL   | MDL  | Unit     | Dil | Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|------|------|----------|-----|-----|---|------------|-----------|
| Chromium             | 1.8    | J         | 5.0  | 0.65 | ug/L     | 1   |     |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL   | RL   | Unit     | Dil | Fac | D | Method     | Prep Type |
| Sulfate              | 91     |           | 2.0  | 2.0  | mg/L     | 1   |     |   | 300.0      | Total/NA  |
| Chloride             | 100    |           | 10   | 10   | mg/L     | 10  |     |   | 300.0      | Total/NA  |
| Ammonia              | 39     |           | 0.50 | 0.50 | mg/L     | 5   |     |   | L107-06-1B | Total/NA  |
| Specific Conductance | 760    |           | 1.0  | 1.0  | umhos/cm | 1   |     |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-GW-78S

### Lab Sample ID: 360-35962-4

| Analyte              | Result | Qualifier | RL   | MDL  | Unit     | Dil | Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|------|------|----------|-----|-----|---|------------|-----------|
| Aluminum             | 55     | J         | 100  | 13   | ug/L     | 1   |     |   | 6010B      | Dissolved |
| Chromium             | 14     |           | 5.0  | 0.65 | ug/L     | 1   |     |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL   | RL   | Unit     | Dil | Fac | D | Method     | Prep Type |
| Sulfate              | 430    |           | 20   | 20   | mg/L     | 10  |     |   | 300.0      | Total/NA  |
| Chloride             | 23     |           | 1.0  | 1.0  | mg/L     | 1   |     |   | 300.0      | Total/NA  |
| Ammonia              | 39     |           | 0.50 | 0.50 | mg/L     | 5   |     |   | L107-06-1B | Total/NA  |
| Specific Conductance | 1200   |           | 1.0  | 1.0  | umhos/cm | 1   |     |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-GW-79S

### Lab Sample ID: 360-35962-5

| Analyte              | Result | Qualifier | RL  | MDL  | Unit     | Dil | Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|-----|------|----------|-----|-----|---|------------|-----------|
| Chromium             | 19     |           | 5.0 | 0.65 | ug/L     | 1   |     |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL  | RL   | Unit     | Dil | Fac | D | Method     | Prep Type |
| Sulfate              | 1000   |           | 40  | 40   | mg/L     | 20  |     |   | 300.0      | Total/NA  |
| Chloride             | 190    |           | 10  | 10   | mg/L     | 10  |     |   | 300.0      | Total/NA  |
| Ammonia              | 97     |           | 1.0 | 1.0  | mg/L     | 10  |     |   | L107-06-1B | Total/NA  |
| Specific Conductance | 3000   |           | 2.0 | 2.0  | umhos/cm | 2   |     |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-PZ-16RR

### Lab Sample ID: 360-35962-6

## Detection Summary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

### Client Sample ID: OC-PZ-16RR (Continued)

Lab Sample ID: 360-35962-6

| Analyte              | Result | Qualifier | RL  | MDL  | Unit     | Dil Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|-----|------|----------|---------|---|------------|-----------|
| Chromium             | 5.4    |           | 5.0 | 0.65 | ug/L     | 1       |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL  | RL   | Unit     | Dil Fac | D | Method     | Prep Type |
| Sulfate              | 720    |           | 20  | 20   | mg/L     | 10      |   | 300.0      | Total/NA  |
| Chloride             | 220    |           | 10  | 10   | mg/L     | 10      |   | 300.0      | Total/NA  |
| Ammonia              | 160    |           | 1.0 | 1.0  | mg/L     | 10      |   | L107-06-1B | Total/NA  |
| Specific Conductance | 3000   |           | 2.0 | 2.0  | umhos/cm | 2       |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-PZ-17RR

Lab Sample ID: 360-35962-7

| Analyte              | Result | Qualifier | RL   | MDL  | Unit     | Dil Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|------|------|----------|---------|---|------------|-----------|
| Aluminum             | 22     | J         | 100  | 13   | ug/L     | 1       |   | 6010B      | Dissolved |
| Chromium             | 11     |           | 5.0  | 0.65 | ug/L     | 1       |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL   | RL   | Unit     | Dil Fac | D | Method     | Prep Type |
| Sulfate              | 440    |           | 20   | 20   | mg/L     | 10      |   | 300.0      | Total/NA  |
| Chloride             | 23     |           | 1.0  | 1.0  | mg/L     | 1       |   | 300.0      | Total/NA  |
| Ammonia              | 32     |           | 0.50 | 0.50 | mg/L     | 5       |   | L107-06-1B | Total/NA  |
| Specific Conductance | 1400   |           | 1.0  | 1.0  | umhos/cm | 1       |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-PZ-18R

Lab Sample ID: 360-35962-8

| Analyte              | Result | Qualifier | RL   | MDL  | Unit     | Dil Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|------|------|----------|---------|---|------------|-----------|
| Chromium             | 12     |           | 5.0  | 0.65 | ug/L     | 1       |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL   | RL   | Unit     | Dil Fac | D | Method     | Prep Type |
| Sulfate              | 60     |           | 2.0  | 2.0  | mg/L     | 1       |   | 300.0      | Total/NA  |
| Chloride             | 110    |           | 10   | 10   | mg/L     | 10      |   | 300.0      | Total/NA  |
| Ammonia              | 33     |           | 0.50 | 0.50 | mg/L     | 5       |   | L107-06-1B | Total/NA  |
| Specific Conductance | 810    |           | 1.0  | 1.0  | umhos/cm | 1       |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-PZ-24

Lab Sample ID: 360-35962-9

| Analyte              | Result | Qualifier | RL  | MDL  | Unit     | Dil Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|-----|------|----------|---------|---|------------|-----------|
| Aluminum             | 15     | J         | 100 | 13   | ug/L     | 1       |   | 6010B      | Dissolved |
| Chromium             | 21     |           | 5.0 | 0.65 | ug/L     | 1       |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL  | RL   | Unit     | Dil Fac | D | Method     | Prep Type |
| Sulfate              | 710    |           | 20  | 20   | mg/L     | 10      |   | 300.0      | Total/NA  |
| Chloride             | 23     |           | 1.0 | 1.0  | mg/L     | 1       |   | 300.0      | Total/NA  |
| Ammonia              | 61     |           | 1.0 | 1.0  | mg/L     | 10      |   | L107-06-1B | Total/NA  |
| Specific Conductance | 2000   |           | 1.0 | 1.0  | umhos/cm | 1       |   | SM 2510B   | Total/NA  |

### Client Sample ID: OC-PZ-25

Lab Sample ID: 360-35962-10

| Analyte              | Result | Qualifier | RL  | MDL  | Unit     | Dil Fac | D | Method     | Prep Type |
|----------------------|--------|-----------|-----|------|----------|---------|---|------------|-----------|
| Chromium             | 9.3    |           | 5.0 | 0.65 | ug/L     | 1       |   | 6010B      | Dissolved |
| Analyte              | Result | Qualifier | RL  | RL   | Unit     | Dil Fac | D | Method     | Prep Type |
| Sulfate              | 420    |           | 20  | 20   | mg/L     | 10      |   | 300.0      | Total/NA  |
| Chloride             | 22     |           | 1.0 | 1.0  | mg/L     | 1       |   | 300.0      | Total/NA  |
| Ammonia              | 43     |           | 1.0 | 1.0  | mg/L     | 10      |   | L107-06-1B | Total/NA  |
| Specific Conductance | 1400   |           | 1.0 | 1.0  | umhos/cm | 1       |   | SM 2510B   | Total/NA  |

## Method Summary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

| Method     | Method Description                 | Protocol  | Laboratory |
|------------|------------------------------------|-----------|------------|
| 6010B      | Dissolved Metals                   | SW846     | TAL WFD    |
| 300.0      | Chloride & Sulfate                 | 40CFR136A | TAL WFD    |
| L107-06-1B | Nitrogen Ammonia                   | LACHAT    | TAL WFD    |
| SM 2510B   | Conductivity, Specific Conductance | SM        | TAL WFD    |

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

LACHAT = LACHAT

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000



## Sample Summary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 360-35962-1   | OC-GW-202S       | Water  | 08/24/11 11:10 | 08/25/11 16:05 |
| 360-35962-2   | OC-GW-202D       | Water  | 08/24/11 10:35 | 08/25/11 16:05 |
| 360-35962-3   | OC-GW-25         | Water  | 08/25/11 10:55 | 08/25/11 16:05 |
| 360-35962-4   | OC-GW-78S        | Water  | 08/24/11 09:00 | 08/25/11 16:05 |
| 360-35962-5   | OC-GW-79S        | Water  | 08/24/11 08:15 | 08/25/11 16:05 |
| 360-35962-6   | OC-PZ-16RR       | Water  | 08/24/11 07:15 | 08/25/11 16:05 |
| 360-35962-7   | OC-PZ-17RR       | Water  | 08/24/11 09:50 | 08/25/11 16:05 |
| 360-35962-8   | OC-PZ-18R        | Water  | 08/25/11 10:05 | 08/25/11 16:05 |
| 360-35962-9   | OC-PZ-24         | Water  | 08/25/11 08:25 | 08/25/11 16:05 |
| 360-35962-10  | OC-PZ-25         | Water  | 08/25/11 09:05 | 08/25/11 16:05 |

# Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: OC-GW-202S

Date Collected: 08/24/11 11:10

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-1

Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | ND     |           | 100 | 13   | ug/L |   |          | 09/01/11 16:06 | 1       |
| Chromium | 4.4    | J         | 5.0 | 0.65 | ug/L |   |          | 09/01/11 16:06 | 1       |

Client Sample ID: OC-GW-202D

Date Collected: 08/24/11 10:35

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-2

Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| Aluminum | 12000  |           | 200 | 25  | ug/L |   |          | 09/01/11 17:53 | 2       |
| Chromium | 930    |           | 10  | 1.3 | ug/L |   |          | 09/01/11 17:53 | 2       |

Client Sample ID: OC-GW-25

Date Collected: 08/25/11 10:55

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-3

Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | ND     |           | 100 | 13   | ug/L |   |          | 09/01/11 16:21 | 1       |
| Chromium | 1.8    | J         | 5.0 | 0.65 | ug/L |   |          | 09/01/11 16:21 | 1       |

Client Sample ID: OC-GW-78S

Date Collected: 08/24/11 09:00

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-4

Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | 55     | J         | 100 | 13   | ug/L |   |          | 09/01/11 16:23 | 1       |
| Chromium | 14     |           | 5.0 | 0.65 | ug/L |   |          | 09/01/11 16:23 | 1       |

Client Sample ID: OC-GW-79S

Date Collected: 08/24/11 08:15

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-5

Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | ND     |           | 100 | 13   | ug/L |   |          | 09/01/11 16:26 | 1       |
| Chromium | 19     |           | 5.0 | 0.65 | ug/L |   |          | 09/01/11 16:26 | 1       |

Client Sample ID: OC-PZ-16RR

Date Collected: 08/24/11 07:15

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-6

Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | ND     |           | 100 | 13   | ug/L |   |          | 09/01/11 16:29 | 1       |
| Chromium | 5.4    |           | 5.0 | 0.65 | ug/L |   |          | 09/01/11 16:29 | 1       |

Client Sample ID: OC-PZ-17RR

Date Collected: 08/24/11 09:50

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-7

Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| Aluminum | 22     | J         | 100 | 13  | ug/L |   |          | 09/01/11 16:32 | 1       |

# Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## Method: 6010B - Dissolved Metals - Dissolved (Continued)

Client Sample ID: OC-PZ-17RR  
Date Collected: 08/24/11 09:50  
Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-7  
Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Chromium | 11     |           | 5.0 | 0.65 | ug/L |   |          | 09/01/11 16:32 | 1       |

Client Sample ID: OC-PZ-18R  
Date Collected: 08/25/11 10:05  
Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-8  
Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | ND     |           | 100 | 13   | ug/L |   |          | 09/01/11 17:44 | 1       |
| Chromium | 12     |           | 5.0 | 0.65 | ug/L |   |          | 09/01/11 17:44 | 1       |

Client Sample ID: OC-PZ-24  
Date Collected: 08/25/11 08:25  
Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-9  
Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | 15     | J         | 100 | 13   | ug/L |   |          | 09/01/11 17:47 | 1       |
| Chromium | 21     |           | 5.0 | 0.65 | ug/L |   |          | 09/01/11 17:47 | 1       |

Client Sample ID: OC-PZ-25  
Date Collected: 08/25/11 09:05  
Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-10  
Matrix: Water

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Aluminum | ND     |           | 100 | 13   | ug/L |   |          | 09/01/11 17:50 | 1       |
| Chromium | 9.3    |           | 5.0 | 0.65 | ug/L |   |          | 09/01/11 17:50 | 1       |

# Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## General Chemistry

Client Sample ID: OC-GW-202S

Date Collected: 08/24/11 11:10

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-1

Matrix: Water

| Analyte              | Result | Qualifier | RL  | RL  | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|-----|----------|---|----------------|----------------|---------|
| Sulfate              | 380    |           | 20  | 20  | mg/L     |   |                | 08/27/11 00:47 | 10      |
| Chloride             | 60     |           | 10  | 10  | mg/L     |   |                | 08/27/11 00:47 | 10      |
| Ammonia              | 62     |           | 1.0 | 1.0 | mg/L     |   | 09/02/11 14:15 | 09/06/11 15:55 | 10      |
| Specific Conductance | 1300   |           | 1.0 | 1.0 | umhos/cm |   |                | 09/01/11 12:15 | 1       |

Client Sample ID: OC-GW-202D

Date Collected: 08/24/11 10:35

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-2

Matrix: Water

| Analyte              | Result | Qualifier | RL  | RL  | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|-----|----------|---|----------------|----------------|---------|
| Sulfate              | 1900   |           | 100 | 100 | mg/L     |   |                | 08/31/11 21:38 | 50      |
| Chloride             | 310    |           | 10  | 10  | mg/L     |   |                | 08/27/11 02:24 | 10      |
| Ammonia              | 190    |           | 1.0 | 1.0 | mg/L     |   | 09/02/11 14:15 | 09/06/11 15:56 | 10      |
| Specific Conductance | 4800   |           | 5.0 | 5.0 | umhos/cm |   |                | 09/01/11 12:15 | 5       |

Client Sample ID: OC-GW-25

Date Collected: 08/25/11 10:55

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-3

Matrix: Water

| Analyte              | Result | Qualifier | RL   | RL   | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|------|------|----------|---|----------------|----------------|---------|
| Sulfate              | 91     |           | 2.0  | 2.0  | mg/L     |   |                | 08/27/11 03:12 | 1       |
| Chloride             | 100    |           | 10   | 10   | mg/L     |   |                | 08/27/11 03:28 | 10      |
| Ammonia              | 39     |           | 0.50 | 0.50 | mg/L     |   | 09/02/11 14:15 | 09/06/11 15:57 | 5       |
| Specific Conductance | 760    |           | 1.0  | 1.0  | umhos/cm |   |                | 09/01/11 12:15 | 1       |

Client Sample ID: OC-GW-78S

Date Collected: 08/24/11 09:00

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-4

Matrix: Water

| Analyte              | Result | Qualifier | RL   | RL   | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|------|------|----------|---|----------------|----------------|---------|
| Sulfate              | 430    |           | 20   | 20   | mg/L     |   |                | 08/27/11 04:00 | 10      |
| Chloride             | 23     |           | 1.0  | 1.0  | mg/L     |   |                | 08/27/11 03:44 | 1       |
| Ammonia              | 39     |           | 0.50 | 0.50 | mg/L     |   | 09/02/11 14:15 | 09/06/11 15:58 | 5       |
| Specific Conductance | 1200   |           | 1.0  | 1.0  | umhos/cm |   |                | 09/01/11 12:15 | 1       |

Client Sample ID: OC-GW-79S

Date Collected: 08/24/11 08:15

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-5

Matrix: Water

| Analyte              | Result | Qualifier | RL  | RL  | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|-----|----------|---|----------------|----------------|---------|
| Sulfate              | 1000   |           | 40  | 40  | mg/L     |   |                | 08/31/11 21:54 | 20      |
| Chloride             | 190    |           | 10  | 10  | mg/L     |   |                | 08/27/11 04:33 | 10      |
| Ammonia              | 97     |           | 1.0 | 1.0 | mg/L     |   | 09/02/11 14:15 | 09/06/11 15:59 | 10      |
| Specific Conductance | 3000   |           | 2.0 | 2.0 | umhos/cm |   |                | 09/01/11 12:15 | 2       |

# Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## General Chemistry

Client Sample ID: OC-PZ-16RR

Date Collected: 08/24/11 07:15

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-6

Matrix: Water

| Analyte              | Result | Qualifier | RL  | RL  | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|-----|----------|---|----------------|----------------|---------|
| Sulfate              | 720    |           | 20  | 20  | mg/L     |   |                | 08/27/11 05:37 | 10      |
| Chloride             | 220    |           | 10  | 10  | mg/L     |   |                | 08/27/11 05:37 | 10      |
| Ammonia              | 160    |           | 1.0 | 1.0 | mg/L     |   | 09/02/11 14:15 | 09/06/11 16:00 | 10      |
| Specific Conductance | 3000   |           | 2.0 | 2.0 | umhos/cm |   |                | 09/01/11 12:15 | 2       |

Client Sample ID: OC-PZ-17RR

Date Collected: 08/24/11 09:50

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-7

Matrix: Water

| Analyte              | Result | Qualifier | RL   | RL   | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|------|------|----------|---|----------------|----------------|---------|
| Sulfate              | 440    |           | 20   | 20   | mg/L     |   |                | 08/27/11 06:09 | 10      |
| Chloride             | 23     |           | 1.0  | 1.0  | mg/L     |   |                | 08/27/11 05:53 | 1       |
| Ammonia              | 32     |           | 0.50 | 0.50 | mg/L     |   | 09/02/11 14:15 | 09/06/11 16:01 | 5       |
| Specific Conductance | 1400   |           | 1.0  | 1.0  | umhos/cm |   |                | 09/01/11 12:15 | 1       |

Client Sample ID: OC-PZ-18R

Date Collected: 08/25/11 10:05

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-8

Matrix: Water

| Analyte              | Result | Qualifier | RL   | RL   | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|------|------|----------|---|----------------|----------------|---------|
| Sulfate              | 60     |           | 2.0  | 2.0  | mg/L     |   |                | 08/27/11 06:25 | 1       |
| Chloride             | 110    |           | 10   | 10   | mg/L     |   |                | 08/27/11 06:42 | 10      |
| Ammonia              | 33     |           | 0.50 | 0.50 | mg/L     |   | 09/02/11 14:15 | 09/06/11 16:02 | 5       |
| Specific Conductance | 810    |           | 1.0  | 1.0  | umhos/cm |   |                | 09/01/11 12:15 | 1       |

Client Sample ID: OC-PZ-24

Date Collected: 08/25/11 08:25

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-9

Matrix: Water

| Analyte              | Result | Qualifier | RL  | RL  | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|-----|----------|---|----------------|----------------|---------|
| Sulfate              | 710    |           | 20  | 20  | mg/L     |   |                | 08/27/11 07:14 | 10      |
| Chloride             | 23     |           | 1.0 | 1.0 | mg/L     |   |                | 08/27/11 06:58 | 1       |
| Ammonia              | 61     |           | 1.0 | 1.0 | mg/L     |   | 09/02/11 14:15 | 09/06/11 16:03 | 10      |
| Specific Conductance | 2000   |           | 1.0 | 1.0 | umhos/cm |   |                | 09/01/11 12:15 | 1       |

Client Sample ID: OC-PZ-25

Date Collected: 08/25/11 09:05

Date Received: 08/25/11 16:05

Lab Sample ID: 360-35962-10

Matrix: Water

| Analyte              | Result | Qualifier | RL  | RL  | Unit     | D | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|-----|----------|---|----------------|----------------|---------|
| Sulfate              | 420    |           | 20  | 20  | mg/L     |   |                | 08/27/11 07:46 | 10      |
| Chloride             | 22     |           | 1.0 | 1.0 | mg/L     |   |                | 08/27/11 07:30 | 1       |
| Ammonia              | 43     |           | 1.0 | 1.0 | mg/L     |   | 09/02/11 14:15 | 09/06/11 16:04 | 10      |
| Specific Conductance | 1400   |           | 1.0 | 1.0 | umhos/cm |   |                | 09/01/11 12:15 | 1       |

## Definitions/Glossary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

### Qualifiers

#### Metals

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                |
|----------------|--|
| ☼              | Listed under the "D" column to designate that the result is reported on a dry weight basis                 |
| %R             | Percent Recovery   |
| DL, RA, RE, IN | Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| EDL            | Estimated Detection Limit (Dioxin)   |
| EPA            | United States Environmental Protection Agency  |
| MDL            | Method Detection Limit   |
| ML             | Minimum Level (Dioxin)   |
| ND             | Not detected at the reporting limit (or method detection limit if shown)                                   |
| PQL            | Practical Quantitation Limit   |
| RL             | Reporting Limit  |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                       |
| TEF            | Toxicity Equivalent Factor (Dioxin)  |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)  |

# QC Association Summary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## Metals

### Analysis Batch: 79423

| Lab Sample ID     | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------------|-----------|--------|--------|------------|
| 360-35962-1       | OC-GW-202S             | Dissolved | Water  | 6010B  |            |
| 360-35962-1 DU    | OC-GW-202S             | Dissolved | Water  | 6010B  |            |
| 360-35962-1 MS    | OC-GW-202S             | Dissolved | Water  | 6010B  |            |
| 360-35962-2       | OC-GW-202D             | Dissolved | Water  | 6010B  |            |
| 360-35962-3       | OC-GW-25               | Dissolved | Water  | 6010B  |            |
| 360-35962-4       | OC-GW-78S              | Dissolved | Water  | 6010B  |            |
| 360-35962-5       | OC-GW-79S              | Dissolved | Water  | 6010B  |            |
| 360-35962-6       | OC-PZ-16RR             | Dissolved | Water  | 6010B  |            |
| 360-35962-7       | OC-PZ-17RR             | Dissolved | Water  | 6010B  |            |
| 360-35962-8       | OC-PZ-18R              | Dissolved | Water  | 6010B  |            |
| 360-35962-9       | OC-PZ-24               | Dissolved | Water  | 6010B  |            |
| 360-35962-10      | OC-PZ-25               | Dissolved | Water  | 6010B  |            |
| LCS 360-79423/1   | Lab Control Sample     | Total/NA  | Water  | 6010B  |            |
| LCSD 360-79423/13 | Lab Control Sample Dup | Total/NA  | Water  | 6010B  |            |
| MB 360-79423/2    | Method Blank           | Total/NA  | Water  | 6010B  |            |

## General Chemistry

### Analysis Batch: 79282

| Lab Sample ID   | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 360-35962-1     | OC-GW-202S         | Total/NA  | Water  | 300.0  |            |
| LCS 360-79282/4 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| MB 360-79282/3  | Method Blank       | Total/NA  | Water  | 300.0  |            |

### Analysis Batch: 79283

| Lab Sample ID   | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 360-35962-2     | OC-GW-202D         | Total/NA  | Water  | 300.0  |            |
| 360-35962-3     | OC-GW-25           | Total/NA  | Water  | 300.0  |            |
| 360-35962-3     | OC-GW-25           | Total/NA  | Water  | 300.0  |            |
| 360-35962-4     | OC-GW-78S          | Total/NA  | Water  | 300.0  |            |
| 360-35962-4     | OC-GW-78S          | Total/NA  | Water  | 300.0  |            |
| 360-35962-5     | OC-GW-79S          | Total/NA  | Water  | 300.0  |            |
| 360-35962-6     | OC-PZ-16RR         | Total/NA  | Water  | 300.0  |            |
| 360-35962-7     | OC-PZ-17RR         | Total/NA  | Water  | 300.0  |            |
| 360-35962-7     | OC-PZ-17RR         | Total/NA  | Water  | 300.0  |            |
| 360-35962-8     | OC-PZ-18R          | Total/NA  | Water  | 300.0  |            |
| 360-35962-8     | OC-PZ-18R          | Total/NA  | Water  | 300.0  |            |
| 360-35962-9     | OC-PZ-24           | Total/NA  | Water  | 300.0  |            |
| 360-35962-9     | OC-PZ-24           | Total/NA  | Water  | 300.0  |            |
| 360-35962-10    | OC-PZ-25           | Total/NA  | Water  | 300.0  |            |
| 360-35962-10    | OC-PZ-25           | Total/NA  | Water  | 300.0  |            |
| LCS 360-79283/6 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| MB 360-79283/5  | Method Blank       | Total/NA  | Water  | 300.0  |            |

### Analysis Batch: 79387

| Lab Sample ID  | Client Sample ID | Prep Type | Matrix | Method   | Prep Batch |
|----------------|------------------|-----------|--------|----------|------------|
| 360-35962-1    | OC-GW-202S       | Total/NA  | Water  | SM 2510B |            |
| 360-35962-2    | OC-GW-202D       | Total/NA  | Water  | SM 2510B |            |
| 360-35962-3    | OC-GW-25         | Total/NA  | Water  | SM 2510B |            |
| 360-35962-3 DU | OC-GW-25         | Total/NA  | Water  | SM 2510B |            |
| 360-35962-4    | OC-GW-78S        | Total/NA  | Water  | SM 2510B |            |
| 360-35962-5    | OC-GW-79S        | Total/NA  | Water  | SM 2510B |            |

# QC Association Summary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## General Chemistry (Continued)

### Analysis Batch: 79387 (Continued)

| Lab Sample ID   | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|-----------------|--------------------|-----------|--------|----------|------------|
| 360-35962-6     | OC-PZ-16RR         | Total/NA  | Water  | SM 2510B |            |
| 360-35962-7     | OC-PZ-17RR         | Total/NA  | Water  | SM 2510B |            |
| 360-35962-8     | OC-PZ-18R          | Total/NA  | Water  | SM 2510B |            |
| 360-35962-9     | OC-PZ-24           | Total/NA  | Water  | SM 2510B |            |
| 360-35962-10    | OC-PZ-25           | Total/NA  | Water  | SM 2510B |            |
| LCS 360-79387/2 | Lab Control Sample | Total/NA  | Water  | SM 2510B |            |
| MB 360-79387/1  | Method Blank       | Total/NA  | Water  | SM 2510B |            |

### Analysis Batch: 79449

| Lab Sample ID   | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 360-35962-2     | OC-GW-202D         | Total/NA  | Water  | 300.0  |            |
| 360-35962-5     | OC-GW-79S          | Total/NA  | Water  | 300.0  |            |
| LCS 360-79449/4 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| MB 360-79449/3  | Method Blank       | Total/NA  | Water  | 300.0  |            |

### Prep Batch: 79479

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method          | Prep Batch |
|-------------------|--------------------|-----------|--------|-----------------|------------|
| 360-35962-1       | OC-GW-202S         | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-2       | OC-GW-202D         | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-3       | OC-GW-25           | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-4       | OC-GW-78S          | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-5       | OC-GW-79S          | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-6       | OC-PZ-16RR         | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-7       | OC-PZ-17RR         | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-8       | OC-PZ-18R          | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-9       | OC-PZ-24           | Total/NA  | Water  | Distill/Ammonia |            |
| 360-35962-10      | OC-PZ-25           | Total/NA  | Water  | Distill/Ammonia |            |
| LCS 360-79479/2-A | Lab Control Sample | Total/NA  | Water  | Distill/Ammonia |            |
| MB 360-79479/1-A  | Method Blank       | Total/NA  | Water  | Distill/Ammonia |            |

### Analysis Batch: 79587

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method     | Prep Batch |
|-------------------|--------------------|-----------|--------|------------|------------|
| 360-35962-1       | OC-GW-202S         | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-2       | OC-GW-202D         | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-3       | OC-GW-25           | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-4       | OC-GW-78S          | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-5       | OC-GW-79S          | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-6       | OC-PZ-16RR         | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-7       | OC-PZ-17RR         | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-8       | OC-PZ-18R          | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-9       | OC-PZ-24           | Total/NA  | Water  | L107-06-1B | 79479      |
| 360-35962-10      | OC-PZ-25           | Total/NA  | Water  | L107-06-1B | 79479      |
| LCS 360-79479/2-A | Lab Control Sample | Total/NA  | Water  | L107-06-1B | 79479      |
| MB 360-79479/1-A  | Method Blank       | Total/NA  | Water  | L107-06-1B | 79479      |



# QC Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## Method: 6010B - Dissolved Metals

Lab Sample ID: MB 360-79423/2

Matrix: Water

Analysis Batch: 79423

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Aluminum | ND        |              | 100 | 13   | ug/L |   |          | 09/01/11 16:03 | 1       |
| Chromium | ND        |              | 5.0 | 0.65 | ug/L |   |          | 09/01/11 16:03 | 1       |

Lab Sample ID: LCS 360-79423/1

Matrix: Water

Analysis Batch: 79423

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | % Rec | % Rec. Limits |
|----------|-------------|------------|---------------|------|---|-------|---------------|
| Aluminum | 5000        | 5290       |               | ug/L |   | 106   | 80 - 120      |
| Chromium | 1000        | 1020       |               | ug/L |   | 102   | 80 - 120      |

Lab Sample ID: LCSD 360-79423/13

Matrix: Water

Analysis Batch: 79423

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

| Analyte  | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | % Rec | % Rec. Limits | RPD | RPD Limit |
|----------|-------------|-------------|----------------|------|---|-------|---------------|-----|-----------|
| Aluminum | 5000        | 5210        |                | ug/L |   | 104   | 80 - 120      | 2   | 20        |
| Chromium | 1000        | 1000        |                | ug/L |   | 100   | 80 - 120      | 1   | 20        |

Lab Sample ID: 360-35962-1 MS

Matrix: Water

Analysis Batch: 79423

Client Sample ID: OC-GW-202S

Prep Type: Dissolved

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | % Rec | % Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|-------|---------------|
| Aluminum | ND            |                  | 5000        | 5020      |              | ug/L |   | 100   | 75 - 125      |
| Chromium | 4.4           | J                | 1000        | 983       |              | ug/L |   | 98    | 75 - 125      |

Lab Sample ID: 360-35962-1 DU

Matrix: Water

Analysis Batch: 79423

Client Sample ID: OC-GW-202S

Prep Type: Dissolved

| Analyte  | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|----------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Aluminum | ND            |                  | ND        |              | ug/L |   | NC  | 20        |
| Chromium | 4.4           | J                | 4.52      | J            | ug/L |   | 2   | 20        |

## Method: 300.0 - Chloride & Sulfate

Lab Sample ID: MB 360-79282/3

Matrix: Water

Analysis Batch: 79282

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| Sulfate  | ND        |              | 2.0 | 2.0 | mg/L |   |          | 08/26/11 18:37 | 1       |
| Chloride | ND        |              | 1.0 | 1.0 | mg/L |   |          | 08/26/11 18:37 | 1       |

Lab Sample ID: LCS 360-79282/4

Matrix: Water

Analysis Batch: 79282

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | % Rec | % Rec. Limits |
|---------|-------------|------------|---------------|------|---|-------|---------------|
| Sulfate | 80.0        | 84.7       |               | mg/L |   | 106   | 85 - 115      |

# QC Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## Method: 300.0 - Chloride & Sulfate (Continued)

Lab Sample ID: LCS 360-79282/4

Matrix: Water

Analysis Batch: 79282

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | % Rec | % Rec. Limits |
|----------|-------------|------------|---------------|------|---|-------|---------------|
| Chloride | 40.0        | 42.4       |               | mg/L |   | 106   | 85 - 115      |

Lab Sample ID: MB 360-79283/5

Matrix: Water

Analysis Batch: 79283

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| Sulfate  | ND        |              | 2.0 | 2.0 | mg/L |   |          | 08/27/11 01:36 | 1       |
| Chloride | ND        |              | 1.0 | 1.0 | mg/L |   |          | 08/27/11 01:36 | 1       |

Lab Sample ID: LCS 360-79283/6

Matrix: Water

Analysis Batch: 79283

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | % Rec | % Rec. Limits |
|----------|-------------|------------|---------------|------|---|-------|---------------|
| Sulfate  | 80.0        | 85.3       |               | mg/L |   | 107   | 85 - 115      |
| Chloride | 40.0        | 42.7       |               | mg/L |   | 107   | 85 - 115      |

Lab Sample ID: MB 360-79449/3

Matrix: Water

Analysis Batch: 79449

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| Sulfate  | ND        |              | 2.0 | 2.0 | mg/L |   |          | 08/31/11 17:52 | 1       |
| Chloride | ND        |              | 1.0 | 1.0 | mg/L |   |          | 08/31/11 17:52 | 1       |

Lab Sample ID: LCS 360-79449/4

Matrix: Water

Analysis Batch: 79449

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | % Rec | % Rec. Limits |
|----------|-------------|------------|---------------|------|---|-------|---------------|
| Sulfate  | 80.0        | 82.7       |               | mg/L |   | 103   | 85 - 115      |
| Chloride | 40.0        | 40.8       |               | mg/L |   | 102   | 85 - 115      |

## Method: L107-06-1B - Nitrogen Ammonia

Lab Sample ID: MB 360-79479/1-A

Matrix: Water

Analysis Batch: 79587

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 79479

| Analyte | MB Result | MB Qualifier | RL   | RL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|------|------|------|---|----------------|----------------|---------|
| Ammonia | ND        |              | 0.10 | 0.10 | mg/L |   | 09/02/11 14:15 | 09/06/11 15:09 | 1       |

Lab Sample ID: LCS 360-79479/2-A

Matrix: Water

Analysis Batch: 79587

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 79479

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | % Rec | % Rec. Limits |
|---------|-------------|------------|---------------|------|---|-------|---------------|
| Ammonia | 10.0        | 9.33       |               | mg/L |   | 93    | 90 - 110      |

# QC Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 360-79387/1  
Matrix: Water  
Analysis Batch: 79387

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL  | RL  | Unit     | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-----|-----|----------|---|----------|----------------|---------|
| Specific Conductance | ND           |                 | 1.0 | 1.0 | umhos/cm |   |          | 09/01/11 12:15 | 1       |

Lab Sample ID: LCS 360-79387/2  
Matrix: Water  
Analysis Batch: 79387

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit     | D | % Rec | % Rec<br>Limits |
|----------------------|----------------|---------------|------------------|----------|---|-------|-----------------|
| Specific Conductance | 1410           | 1420          |                  | umhos/cm |   | 100   | 85 - 115        |

Lab Sample ID: 360-35962-3 DU  
Matrix: Water  
Analysis Batch: 79387

Client Sample ID: OC-GW-25  
Prep Type: Total/NA

| Analyte              | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit     | D | RPD | RPD<br>Limit |
|----------------------|------------------|---------------------|--------------|-----------------|----------|---|-----|--------------|
| Specific Conductance | 760              |                     | 759          |                 | umhos/cm |   | 0.4 | 20           |

# Lab Chronicle

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

## Client Sample ID: OC-GW-202S

Lab Sample ID: 360-35962-1

Date Collected: 08/24/11 11:10

Matrix: Water

Date Received: 08/25/11 16:05

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 16:06       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79282        | 08/27/11 00:47       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 1               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 10              | 79587        | 09/06/11 15:55       | RWE     | TAL WFD |

## Client Sample ID: OC-GW-202D

Lab Sample ID: 360-35962-2

Date Collected: 08/24/11 10:35

Matrix: Water

Date Received: 08/25/11 16:05

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 2               | 79423        | 09/01/11 17:53       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 02:24       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 5               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 50              | 79449        | 08/31/11 21:38       | RWE     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 10              | 79587        | 09/06/11 15:56       | RWE     | TAL WFD |

## Client Sample ID: OC-GW-25

Lab Sample ID: 360-35962-3

Date Collected: 08/25/11 10:55

Matrix: Water

Date Received: 08/25/11 16:05

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 16:21       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 1               | 79283        | 08/27/11 03:12       | RWE     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 03:28       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 1               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 5               | 79587        | 09/06/11 15:57       | RWE     | TAL WFD |

## Client Sample ID: OC-GW-78S

Lab Sample ID: 360-35962-4

Date Collected: 08/24/11 09:00

Matrix: Water

Date Received: 08/25/11 16:05

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 16:23       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 1               | 79283        | 08/27/11 03:44       | RWE     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 04:00       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 1               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 5               | 79587        | 09/06/11 15:58       | RWE     | TAL WFD |

# Lab Chronicle

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

**Client Sample ID: OC-GW-79S**

**Lab Sample ID: 360-35962-5**

**Date Collected: 08/24/11 08:15**

**Matrix: Water**

**Date Received: 08/25/11 16:05**

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 16:26       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 04:33       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 2               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 20              | 79449        | 08/31/11 21:54       | RWE     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 10              | 79587        | 09/06/11 15:59       | RWE     | TAL WFD |

**Client Sample ID: OC-PZ-16RR**

**Lab Sample ID: 360-35962-6**

**Date Collected: 08/24/11 07:15**

**Matrix: Water**

**Date Received: 08/25/11 16:05**

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 16:29       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 05:37       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 2               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 10              | 79587        | 09/06/11 16:00       | RWE     | TAL WFD |

**Client Sample ID: OC-PZ-17RR**

**Lab Sample ID: 360-35962-7**

**Date Collected: 08/24/11 09:50**

**Matrix: Water**

**Date Received: 08/25/11 16:05**

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 16:32       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 1               | 79283        | 08/27/11 05:53       | RWE     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 06:09       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 1               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 5               | 79587        | 09/06/11 16:01       | RWE     | TAL WFD |

**Client Sample ID: OC-PZ-18R**

**Lab Sample ID: 360-35962-8**

**Date Collected: 08/25/11 10:05**

**Matrix: Water**

**Date Received: 08/25/11 16:05**

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 17:44       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 1               | 79283        | 08/27/11 06:25       | RWE     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 06:42       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 1               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 5               | 79587        | 09/06/11 16:02       | RWE     | TAL WFD |

# Lab Chronicle

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

**Client Sample ID: OC-PZ-24**

**Lab Sample ID: 360-35962-9**

**Date Collected: 08/25/11 08:25**

**Matrix: Water**

**Date Received: 08/25/11 16:05**

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 17:47       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 1               | 79283        | 08/27/11 06:58       | RWE     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 07:14       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 1               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 10              | 79587        | 09/06/11 16:03       | RWE     | TAL WFD |

**Client Sample ID: OC-PZ-25**

**Lab Sample ID: 360-35962-10**

**Date Collected: 08/25/11 09:05**

**Matrix: Water**

**Date Received: 08/25/11 16:05**

| Prep Type | Batch Type | Batch Method    | Run | Dilution Factor | Batch Number | Prepared Or Analyzed | Analyst | Lab     |
|-----------|------------|-----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Analysis   | 6010B           |     | 1               | 79423        | 09/01/11 17:50       | TJS     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 1               | 79283        | 08/27/11 07:30       | RWE     | TAL WFD |
| Total/NA  | Analysis   | 300.0           |     | 10              | 79283        | 08/27/11 07:46       | RWE     | TAL WFD |
| Total/NA  | Analysis   | SM 2510B        |     | 1               | 79387        | 09/01/11 12:15       | AMS     | TAL WFD |
| Total/NA  | Prep       | Distill/Ammonia |     |                 | 79479        | 09/02/11 14:15       | RWE     | TAL WFD |
| Total/NA  | Analysis   | L107-06-1B      |     | 10              | 79587        | 09/06/11 16:04       | RWE     | TAL WFD |

## Laboratory References:

TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

## Certification Summary

Client: Olin Corporation  
Project/Site: Olin Chemical Quarterly Groundwater

TestAmerica Job ID: 360-35962-1

| Laboratory            | Authority      | Program             | EPA Region | Certification ID |
|-----------------------|----------------|---------------------|------------|------------------|
| TestAmerica Westfield | Connecticut    | State Program       | 1          | PH-0494          |
| TestAmerica Westfield | Maine          | State Program       | 1          | MA00014          |
| TestAmerica Westfield | Massachusetts  | State Program       | 1          | M-MA014          |
| TestAmerica Westfield | New Hampshire  | NELAC               | 1          | 2539             |
| TestAmerica Westfield | New York       | NELAC               | 2          | 10843            |
| TestAmerica Westfield | North Carolina | North Carolina DENR | 4          | 647              |
| TestAmerica Westfield | Rhode Island   | State Program       | 1          | LAO00057         |
| TestAmerica Westfield | Vermont        | State Program       | 1          | VT-10843         |

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

# State Accreditation Matrix

| Method Name   | Description  | State where <b>Primary</b> Accreditation is Carried |                    |       |                |
|---------------|--|---|--------------------|-------|----------------|
|               |  | New Hampshire (NELAC)                               | Mass               | Conn  | North Carolina |
| 821-R-02-012  | Toxicity, Acute (48-Hour)(list upon request)       | NP  |                    |       |                |
| SM 4500 Cl F  | Chlorine, Residual                                 |   | NP                 |       |                |
| SM 9215E      | Heterotrophic Plate Count (SimPlate)               |   | P                  |       |                |
| SM 9222D      | Coliforms, Fecal (Membrane Filter)                 |   | P/NP               |       |                |
| SM 9223       | Coliforms, Total, and E.Coli (Colilert-P/A)        |   | P                  |       |                |
| SM 9224       | Coliforms, Total, and E.Coli (Enumeration)         |   | P                  |       |                |
| 1103.1        | E.coli   |   | ambient/<br>source |       |                |
| Enterolert    | Enterococcus                                       |   |                    |       |                |
| 200.8 Rev 5.4 | Metals (ICP/MS) (list upon request)                | NP/P  | NP/P               |       |                |
| 200.7 Rev 4.4 | Metals (ICP)(list upon request)                    | NP/P  | NP/P               |       |                |
| 6010B         | Metals (ICP)(list upon request)                    | NP/SW   |                    |       |                |
| 245.1         | Mercury (CVAA)                                     | NP/P  | NP                 |       |                |
| 7470A         | Mercury (CVAA)                                     | NP  |                    |       |                |
| 7471A         | Mercury (CVAA)                                     | SW  |                    |       |                |
| SM 2340B      | Total Hardness (as CaCO3) by calculation           | NP/P  | NP                 |       |                |
| 3005A         | Preparation, Total Recoverable or Dissolved Metals | NP/P  |                    |       |                |
| 3010A         | Preparation, Total Metals                          | NP/P  |                    |       |                |
| 3020A         | Preparation, Total Metals                          | NP/P/SW   |                    |       |                |
| 3050B         | Preparation, Metals                                | SW  |                    |       |                |
| 504.1         | EDB, DBCP and 1,2,3-TCP (GC)                       | P   | P                  |       |                |
| 608           | Organochlorine Pest/PCBs (list upon request)       | NP  | NP                 |       |                |
| 625           | Semivolatile Org Comp (GC/MS)(list upon request)   | NP  | NP                 |       |                |
| 3546          | Microwave Extraction                               | SW  |                    |       |                |
| 3510C         | Liquid-Liquid Extraction (Separatory Funnel)       | NP  |                    |       |                |
| 3550B         | Ultrasonic Extraction                              | SW  |                    |       |                |
| 8081A         | Organochlorine Pesticides (GC)(list upon request)  | NP/SW   |                    |       |                |
| 8082          | PCBs by Gas Chromatography(list upon request)      | NP/SW   |                    |       |                |
| 8270C         | Semivolatile Comp.(GC/MS)(list upon request)       | NP/SW   |                    |       |                |
| CT ETPH       | Conn - Ext. Total petroleum Hydrocarbons (GC)      |   |                    | NP/SW |                |
| MA-EPH        | Mass - Extractable Petroleum Hydrocarbons (GC)     |   |                    |       | NP/SW          |
| 524.2         | Volatile Org Comp (GC/MS)(list upon request)       | P   | P                  |       |                |
| 524.2         | Trihalomethane compounds                           | P   | P                  |       |                |
| 624           | Volatile Org Comp (GC/MS)(list upon request)       | NP  | NP                 |       |                |
| 5035          | Closed System Purge and Trap                       | SW  |                    |       |                |
| 5030B         | Purge and Trap                                     | NP  |                    |       |                |
| 8260B         | Volatile Org Comp. (GC/MS)(list upon request)      | NP/SW   |                    |       |                |
| MAVPH         | Mass - Volatile Petroleum Hydrocarbons (GC)        |   |                    |       | NP/SW          |
| 180.1         | Turbidity, Nephelometric                           | P   | P                  |       |                |
| 300           | Anions, Ion Chromatography                         | NP/P  | NP/P               |       |                |
| 410.4         | COD  | NP  | NP                 |       |                |
| 1010          | Ignitability, Pensky-Martens Closed-Cup Method     | SW  |                    |       |                |
| 10-107-06-2   | Nitrogen, Total Kjeldahl                           | NP  | NP                 |       |                |
| 7196A         | Chromium, Hexavalent                               | NP/SW   |                    |       |                |
| 9012A         | Cyanide, Total and/or Amenable                     | NP/SW   |                    |       |                |
| 9030B         | Sulfide, Distillation (Acid Soluble and Insoluble) | NP  |                    |       |                |
| 9045C         | pH   | SW  |                    |       |                |
| L107041C      | Nitrogen, Nitrate                                  | NP  | P                  |       |                |
| L107-06-1B    | Nitrogen Ammonia                                   | NP  | NP                 |       |                |
| L204001A CN   | Cyanide, Total                                     | P   | NP/P               |       |                |
| L210-001A     | Phenolics, Total Recoverable                       | NP  | NP                 |       |                |
| SM 2320B      | Alkalinity   | NP/P  | NP/P               |       |                |
| SM 2510B      | Conductivity, Specific Conductance                 | NP/P  | NP/P               |       |                |
| SM 2540C      | Solids, Total Dissolved (TDS)                      | NP/P  | NP/P               |       |                |
| SM 2540D      | Solids, Total Suspended (TSS)                      | NP  | NP                 |       |                |
| SM 3500 CR D  | Chromium, Hexavalent                               | NP  |                    |       |                |
| SM 4500 H+ B  | pH   | NP/P  | NP/P               |       |                |
| SM 4500 NO2 B | Nitrogen, Nitrite                                  | NP  | P                  |       |                |
| SM 4500 P E   | Phosphorus, Orthophosphate                         | NP/P  | NP                 |       |                |
| SM 4500 P E   | Phosphorus, Total                                  | NP  | NP                 |       |                |
| SM 4500 S2 D  | Sulfide, Total                                     | NP  |                    |       |                |
| SM 5210B      | BOD, 5-Day   | NP  | NP                 |       |                |
| SM 5310B      | Organic Carbon, Total (TOC)                        | NP/P  | NP                 |       |                |

Not all organic compounds are accredited under NELAC

For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory

The lab carries additional accreditations with several states. This is the laboratories typical listing but is subject to change based on the laboratories current certification standing.



## Login Sample Receipt Checklist

Client: Olin Corporation

Job Number: 360-35962-1

Login Number: 35962

List Source: TestAmerica Westfield

List Number: 1

Creator: Beaumier, Janine E

| Question   | Answer | Comment |
|--|--------|---------|
| Radioactivity either was not measured or, if measured, is at or below background | N/A    |         |
| The cooler's custody seal, if present, is intact.                                | N/A    |         |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable.  | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                | True   |         |
| Is the Field Sampler's name present on COC?                                      | True   |         |
| There are no discrepancies between the sample IDs on the containers and the COC. | True   |         |
| Samples are received within Holding Time.  | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.                                       | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| Sample Preservation Verified.  | True   |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |         |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | N/A    |         |
| Multiphasic samples are not present.   | True   |         |
| Samples do not require splitting or compositing.                                 | True   |         |
| Residual Chlorine Checked.   | N/A    |         |

# TestAmerica Westfield

Westfield Executive Park 53 Southampton Road  
Westfield, MA 01085  
Phone (413) 572-4000 Fax (413) 572-3707

## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

|  |         |  |       |   |   |                              |       |
|--|---------|--|-------|---|---|------------------------------|-------|
| <b>Client Information</b>  |         | Lab PM: Mason, Becky C                   |       | Carrier Tracking No(s):                     |   | COC No:                      |       |
| Client Contact: James Cashwell   |         | Phone: 978 658 6121                      |       | E-Mail: becky.mason@testamerica.com         |   | Page:                        |       |
| Company: Olin Corporation  |         | Address: 51 Eames Street                 |       | City: Wilmington                            |   | State, Zip: MA, 01887        |       |
| Phone: 978 658 6121  |         | PO #: REW10013                           |       | WO #:                                       |   | Project #: 36001816          |       |
| Email: beguichard@olin.com   |         | Project Name: Olin Quarterly Groundwater |       | Site:                                       |   | SSOW#:                       |       |
| Due Date Requested:  |         | TAT Requested (days):                    |       | Analysis Requested                          |   | Total Number of Containers   |       |
| Sample Identification  |         | Sample Date                              |       | Sample Time                                 |   | Sample Type (C=Comp, G=grab) |       |
| Matrix (Wet, Swell, Gravel, Other)   |         | Preservation Code                        |       | Field Filled Sample (Yes or No)             |   | Perform MS/MSD (Yes or No)   |       |
| LACH 107.06.1.B - Ammonia  |         | 6010B - Field filtered A/Cr              |       | 2510B Spec. Cond. 300.0.28D SO4/Cl          |   | Special Instructions/Note:   |       |
| OC-GW-202S   | 8/24/11 | 11:10                                    | Water | Y   | X | X                            | 3 MCP |
| OC-GW-202D   | 8/24/11 | 10:35                                    | Water | Y   | X | X                            | 3     |
| OC-GW-25   | 8/25/11 | 10:55                                    | Water | Y   | X | X                            | 3     |
| OC-GW-76S  | 8/24/11 | 9:00                                     | Water | Y   | X | X                            | 3     |
| OC-GW-79S  | 8/24/11 | 8:15                                     | Water | Y   | X | X                            | 3     |
| OC-PZ-16RR   | 8/24/11 | 7:15                                     | Water | Y   | X | X                            | 3     |
| OC-PZ-17RR   | 8/24/11 | 9:50                                     | Water | Y   | X | X                            | 3     |
| OC-PZ-18R  | 8/25/11 | 10:05                                    | Water | Y   | X | X                            | 3     |
| OC-PZ-24   | 8/25/11 | 8:25                                     | Water | Y   | X | X                            | 3     |
| OC-PZ-25   | 8/25/11 | 9:05                                     | Water | Y   | X | X                            | 3     |
| Possible Hazard Identification   |         |  |       |   |   |                              |       |
| <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |         |  |       |   |   |                              |       |
| Deliverable Requested: I, II, III, IV, Other (specify)   |         |  |       |   |   |                              |       |
| Empty Kit Relinquished by:   |         |  |       |   |   |                              |       |
| Date:  |         |  |       |   |   |                              |       |
| Time:  |         |  |       |   |   |                              |       |
| Special Instructions/QC Requirements:  |         |  |       |   |   |                              |       |
| Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  |         |  |       |   |   |                              |       |
| <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months   |         |  |       |   |   |                              |       |
| Method of Shipment:  |         |  |       |   |   |                              |       |
| Relinquished by: <i>Becky Cashwell</i>   |         | Date: 8/25/11                            |       | Time: 12:30                                 |   | Company: Olin Corporation    |       |
| Relinquished by: <i>M. Beguichard</i>  |         | Date: 8/25/11                            |       | Time: 1400                                  |   | Company: Olin Corporation    |       |
| Relinquished by: <i>Becky Cashwell</i>   |         | Date: 8/25/11                            |       | Time: 16:05                                 |   | Company: Olin Corporation    |       |
| Custody Seal Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   |         | Custody Seal No.:                        |       | Cooler Temperature(s) °C and Other Remarks: |   | 0.10 C ulice                 |       |